**School of Chemical Sciences**

**Devi Ahilya Vishwavidyalaya, Indore**

**M.Sc. Chemistry**

**SEMESTER III**

**MCH-305: ADVANCED MEDICINAL CHEMISTRY**

**Credits 3**

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| **Unit I** | **Antineoplastic agents**  Introduction, cancer chemotherapy, role of alkylating agents and antimetabolite in treatment of cancer, carcinolytic antibiotics, and mitotic inhibitors, Synthesis of mechlorethamine, cyclophosphamide, melphalan, uracil, mustards and 6-mercaptopurine, recent development in cancer chemotherapy. |
| **Unit II** | **Psychoactive drugs-The chemotherapy of mind**  Introduction, neurotransmitters, CNS depressants, general anesthetics, mode of action of hypnotics, sedatives, anti-anxiety drugs, benzodiazipines, buspirone, neurochemistry of mental diseases, Anti psychotic drugs the neuroleptics, anti-depressants, butyro phenones, stereo chemical aspects of psychotropic drugs. Synthesis of diazepam, oxazepam, chlorazepam, alprazolam, phenytoin, ethosuximide, trimethadione, barbiturates, thiopental sodium, gluthemide. |
| **Unit III** | **Tranquilizers:-**  Phenothiazine derivatives - structure- activity relationship, metabolism and mode of action; other tranquilizers. Synthesis of chlorpromazine.  **Sulpha Drugs:**  Classification, structure-activity-relationship, Mode of action. Synthesis: Sulphadiazine, Sulphaisoxazole, Sulphadimethoxine. |
| **Unit IV** | **Diuretics (Drugs acting on renal system):**  Classification, structure-activity relationships and mode of action of organomercurials, phenoxy acetic acids, purines carbonic anhydrase inhibitors, benzothiadiazines , ulphamoyl benzoic acid derivatives, endocrine antagonists. |
|  | **Books Suggested**   * 1. Robert F.dorge Wilson and Gisvod. Textbook of organic Medicinal and Pharmaceu-tical Chemistry.  1. Ed. M.E. Wolff, John wiley. Berger’s Medicinal Chemistry and drug discovery, Vol-I. 2. J.Faprhop and G.Penzillin. Organic synthesis-concept, method and starting material. 3. Eds.Korolkovas and Burkhattar J.H. John Wiley & sons. Essentials of medicinal Chemistry. 4. Graham & Patrick, Introduction to Medicinal Chemistry OUP 5. Goodman and Gilman’s Pharmacological Basis of Therapeutics, McGraw-Hill. 6. Wilson and Gisvold’s Text Book of Organic Medicinal and Pharmaceutical Chemistry, Ed Robert F. Dorge. |